

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

WASTE MANAGEMENT SYSTEM

(No.)
CODE 312

DEFINITION

A planned system in which all necessary components are installed for managing liquid and solid waste, including runoff from concentrated waste areas, in a manner that does not degrade air, soil, or water resources.

Scope

This standard establishes the minimum acceptable requirements for planning and operating waste management systems. It does not apply to the design and installation of the system components.

PURPOSES

To manage waste in rural areas in a manner that prevents or minimizes degradation of air, soil, and water resources and protects public health and safety. Such systems are planned to preclude discharge of pollutants to surface or ground water and to recycle waste through soil and plants to the fullest extent practicable.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where: (1) waste is generated by agricultural production or processing; (2) waste from municipal and industrial treatment plants is used in agricultural production; (3) all practice components necessary to make a complete system are specified; and (4) soil, water, and plant resources are adequate to properly manage the waste.

CRITERIA

General

Waste, as used in this standard, includes both liquid and solid waste, waste water used in processing, and polluted runoff such as that from a feedlot.

A waste management system for a given enterprise shall include the components necessary to properly manage waste and prevent degradation of air, water,

soil and plant resources. A system may consist of a single component, such as a diversion, or may consist of several components. Components shall not be installed until an overall waste management system has been planned.

Components

Components of complete waste management systems may include, but are not limited to, the following:

Debris basins	Pond sealings or linings
Dikes	Subsurface drains
Diversions	Surface drains
Fencing	Waste storage facilities
Grassed waterways	Waste treatment lagoons
Irrigation systems	Waste utilization
Irrigation water conveyance	

Design criteria for individual components shall be according to practice standards. The criteria for the design of components not included in this handbook shall be consistent with sound engineering principles.

Sequence of installation

System components shall be planned and installed in a sequence that insures that each will function as intended without being hazardous to others or to the overall system.

Safety

Safety features and devices shall be included in waste management systems, as appropriate, to protect animals and humans from drowning, dangerous gases, and other hazards. Fencing shall be provided, as necessary, to prevent livestock and others from using facilities for other purposes.

CONSIDERATIONS

1. Waste should be used to the fullest extent possible by recycling it through soil and plants. If very

little land is available, such practices as lagoons and oxidation ditches may be needed.

2. Clean water should be excluded from concentrated waste areas to the fullest extent practical.
3. Manure shall be collected and safely spread on land, treated, or stored until it can be safely spread. Adequate storage must be provided to allow spreading during favorable weather and at times compatible with crop management and available labor.
4. Polluted runoff and seepage from concentrated waste areas shall be intercepted and directed to storage or treatment facilities for future disposal or be directly applied to land in an acceptable manner.
5. Wastewater from processing shall be collected and directly applied, stored, or treated before using it.
6. Adequate drainage, erosion control, and other soil and water management practices shall be incorporated to prevent system-related problems.
7. The overall system shall include sufficient land for proper use or disposal of waste at locations, times, rates and volumes that maintain desirable water, soil, plant, and other environmental conditions. Appropriate waste-handling equipment shall be available for effective operation of the system.
8. The system should be outside major viewsheds to conserve visual resources. Vegetative screens and other methods should be provided, as appropriate, to improve visual conditions.

Water Quantity

1. Effects on the water budget, especially effects on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, on farm uses and ground water recharge.
2. Variability of effects often seasonal and weather variations.
3. Effects of vegetation on soil moisture.
4. Effects of snow catch and melt on water budget components.
5. Effects of increasing organic matter on water holding capacity of the soil.

6. Potential for a change in plant growth and transpiration because of changes in the volume of soil water.

Water Quality

1. Effects of both growing and decaying vegetation or nutrients balance in the root zone.
2. Effects on erosion and the movement of sediment, pathogens, organic material, and soluble and sediment-attached substances carried by runoff.
3. Effects of use and management of nutrients and pesticides on surface and ground water quality.
4. Effects on the visual quality onsite and of downstream water.
5. Sediment-attached and construction-related effects on the quality of onsite downstream water courses and impoundments.
6. Effects on the movement of dissolved substances below the root zone and toward ground water, especially for on-farm water supply for human and livestock.
7. Effects on wetlands and water related wildlife habitats.

Endangered Species Considerations

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and

usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

PLANS AND SPECIFICATIONS

Plans and specifications for waste management systems shall be in keeping with this standard and standards for individual system components.

OPERATION AND MAINTENANCE

The owner or operator shall be responsible for operating and maintaining the system. An operation plan shall be prepared for this use. It should provide specific details concerning the operation of each component and should include:

1. Timing, rates, volumes, and locations for application of waste and, if appropriate, approximate number of trips for hauling equipment and estimate of the time required.
2. Minimum and maximum operation levels for storage and treatment practices and other operations specific to the practice, such as estimated frequency of solids removal.
3. Safety warnings, particularly where there is danger of drowning or exposure to poisonous or explosive gases.
4. Maintenance requirements for each of the practices.